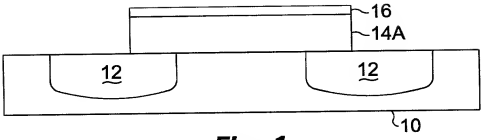


Fig. 1
PRIOR ART

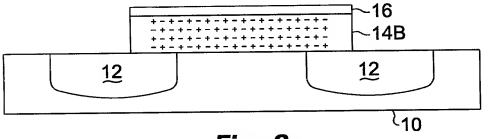


Fig. 2
PRIOR ART

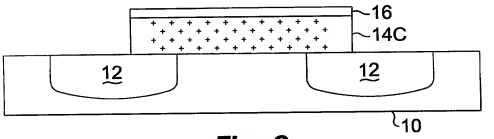


Fig. 3
PRIOR ART

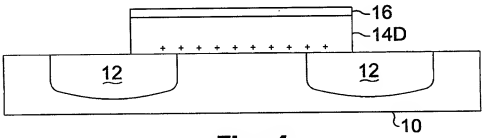


Fig. 4
PRIOR ART

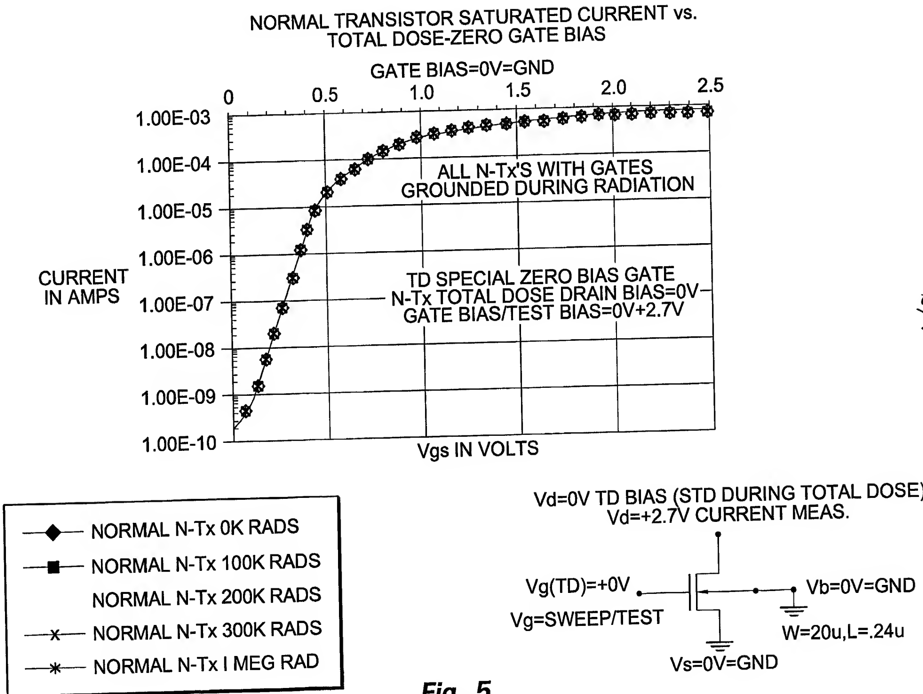

NORMAL TRANSISTOR SATURATED CURRENT vs.
TOTAL DOSE-ZERO GATE BIAS
GATE BIAS=0V=GND
0
0.5
1.0
1.5
2.0
2.5
1.00E-03
1.00E-04
1.00E-05
1.00E-06
1.00E-07
1.00E-08
1.00E-09
1.00E-10
CURRENT
IN AMPS
ALL N-Tx'S WITH GATES
GROUNDED DURING RADIATION
TD SPECIAL ZERO BIAS GATE
N-Tx TOTAL DOSE DRAIN BIAS=0V
GATE BIAS/TEST BIAS=0V+2.7V
Vgs IN VOLTS
NORMAL N-Tx 0K RADS
NORMAL N-Tx 100K RADS
NORMAL N-Tx 200K RADS
NORMAL N-Tx 300K RADS
NORMAL N-Tx I MEG RAD
Vd=0V TD BIAS (STD DURING TOTAL DOSE)
Vd=+2.7V CURRENT MEAS.
Vg(TD)=+0V
Vg=SWEEP/TEST
Vb=0V=GND
W=20u,L=.24u
Vs=0V=GND

Fig. 5

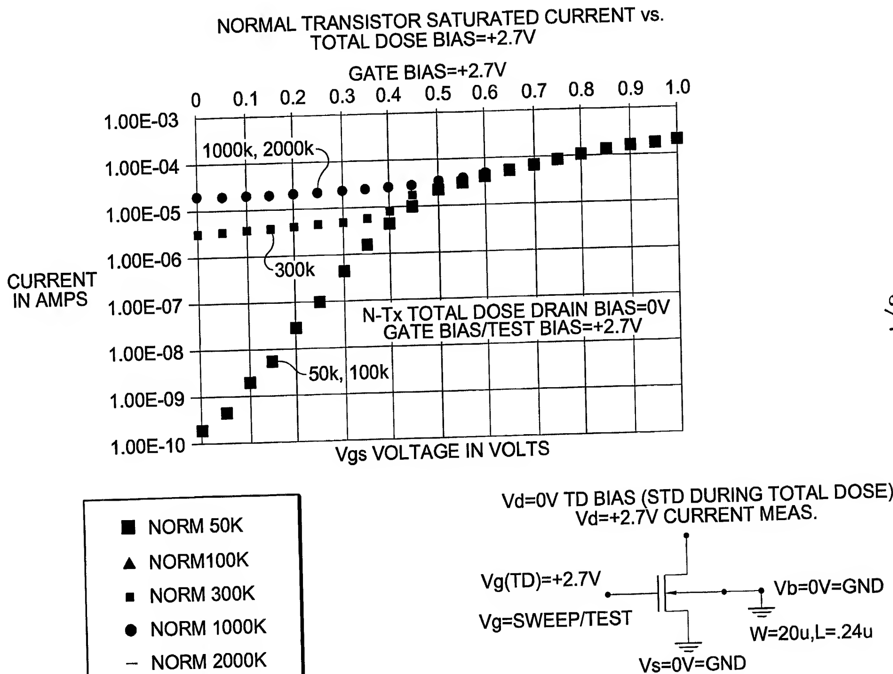

NORMAL TRANSISTOR SATURATED CURRENT vs.
TOTAL DOSE BIAS=+2.7V
GATE BIAS=+2.7V
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
1.00E-03
1.00E-04
1.00E-05
1.00E-06
1.00E-07
1.00E-08
1.00E-09
1.00E-10
CURRENT
IN AMPS
1000k, 2000k
300k
50k, 100k
N-Tx TOTAL DOSE DRAIN BIAS=0V
GATE BIAS/TEST BIAS=+2.7V
Vgs VOLTAGE IN VOLTS
NORM 50K
NORM100K
NORM 300K
NORM 1000K
NORM 2000K
Vd=0V TD BIAS (STD DURING TOTAL DOSE)
Vd=+2.7V CURRENT MEAS.
Vg(TD)=+2.7V
Vg=SWEEP/TEST
Vb=0V=GND
W=20u,L=.24u
Vs=0V=GND

Fig. 6

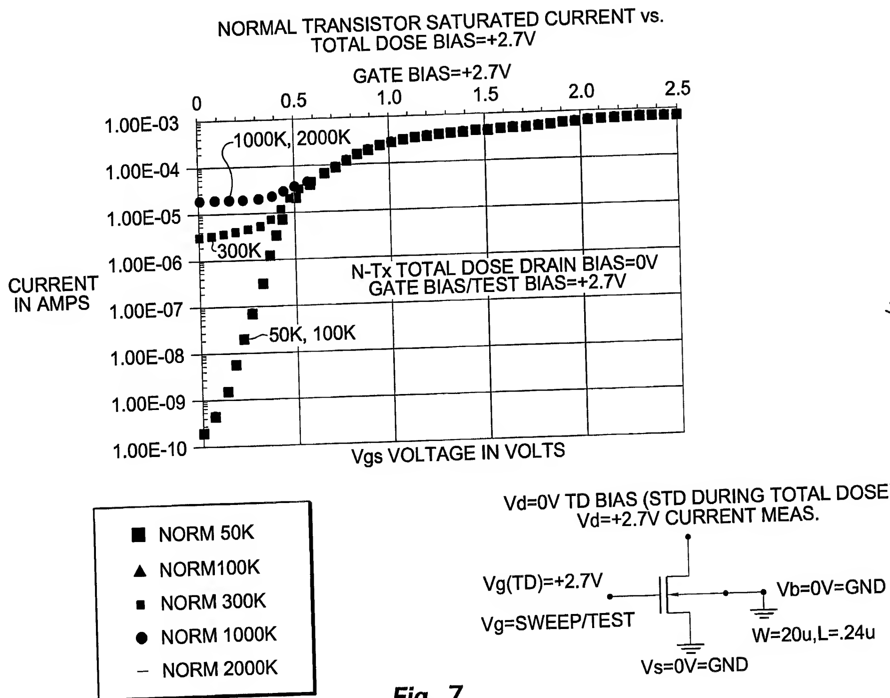
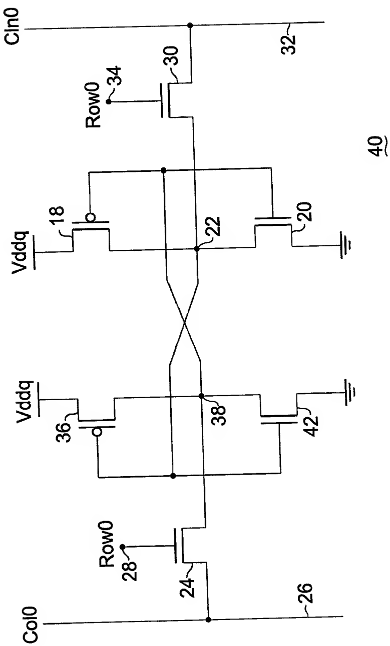

NORMAL TRANSISTOR SATURATED CURRENT vs.
TOTAL DOSE BIAS=+2.7V
GATE BIAS=+2.7V
0
0.5
1.0
1.5
2.0
2.5
1.00E-03
1.00E-04
1.00E-05
1.00E-06
1.00E-07
1.00E-08
1.00E-09
1.00E-10
CURRENT IN AMPS
1000K, 2000K
300K
50K, 100K
N-Tx TOTAL DOSE DRAIN BIAS=0V
GATE BIAS/TEST BIAS=+2.7V
Vgs VOLTAGE IN VOLTS
NORM 50K
NORM100K
NORM 300K
NORM 1000K
NORM 2000K
Vd=0V TD BIAS (STD DURING TOTAL DOSE)
Vd=+2.7V CURRENT MEAS.
Vg(TD)=+2.7V
Vg=SWEEP/TEST
Vb=0V=GND
W=20u,L=.24u
Vs=0V=GND

Fig. 7



Cln0
32
30
Row0
34
40
Vddq
18
22
20
Vddq
36
38
42
Row0
28
24
Col0
26

Fig. 8

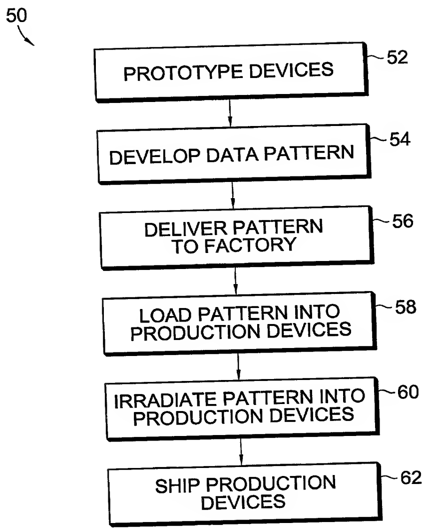


Fig. 9

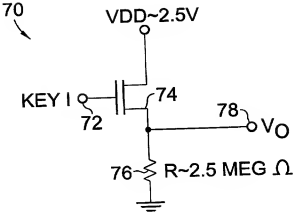


Fig. 10

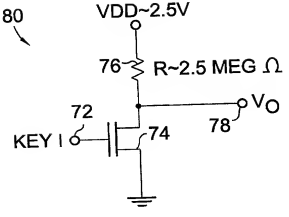


Fig. 11

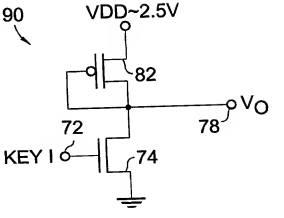


Fig. 12

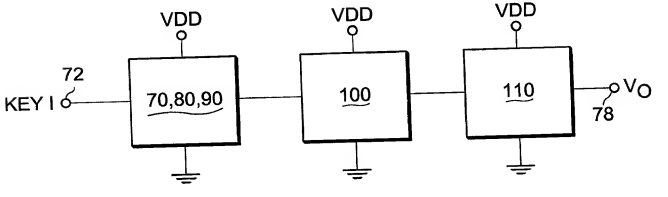


Fig. 13